

**STATE FOREST LAND  
ENVIRONMENTAL CHECKLIST**

**Purpose of Checklist:**

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

**Instructions for Applicants:**

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. Highlighted questions are supplemental to the standard SEPA checklist. These questions look at the proposed project in relationship to the surrounding landscape. Adjacency and landscape/watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at <http://www.dnr.wa.gov> under "SEPA Center." These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the attached forest practice application acres, or the actual timber sale acres.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

**Use of checklist for nonproject proposals:**

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer" and "affected geographic area," respectively.

**A. BACKGROUND**

1. Name of proposed project, if applicable:

Timber Sale Name: **Quark** Agreement #: **30-74719**

2. Name of applicant: **Department of Natural Resources (DNR)**

3. Address and phone number of applicant and contact person:

<b>Northwest Region</b>	<b>Contact Person: Candace Johnson</b>
<b>919 North Township St.</b>	<b>Telephone: (360) 856-3500</b>
<b>Sedro Woolley, WA 98284</b>	

4. Date checklist prepared: **05/10/2003**

5. Agency requesting checklist: **Department of Natural Resources**

6. Proposed timing or schedule (including phasing, if applicable):

- |    |  |
|----|--|
| a. | Auction Date: <b>01/26/2004</b>                                    |
| b. | Planned contract end date (but may be extended): <b>10/31/2005</b> |
| c. | Phasing: <b>Does not apply.</b>                                    |

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.  
**Yes. See below.**

**Timber Sale**

- |    |   |
|----|---|
| a. | Site preparation: <b>The need for site prep, including herbicide application, will be assessed following harvest.</b>                         |
| b. | Regeneration Method: <b>Hand plant with conifer mix seedlings within two years of harvest and natural seeding.</b>                            |
| c. | Vegetation Management: <b>Hardwood saplings in both units will probably be hand slashed 5 to 7 years after harvest.</b>                       |
| d. | Thinning: <b>The need for a precommercial thinning will be assessed in 10 to 15 years. Commercial thinning is possible in 25 to 45 years.</b> |

**Roads:**

**The proposed road to unit #1 will access a future sale tentatively scheduled for 2005. The proposed road to Unit #2 will access future sales tentatively scheduled for 2011-2020. Required routine road, ditch and culvert maintenance will be conducted at periodic intervals. A complete description of road construction specifications and related procedures is provided in the department's road plan for this timber sale available at the Northwest Region office, Sedro-Woolley.**

**Rock Pits and/or Sale:**

**A new on-site rock pit will be developed with this sale at the end of the CA-1100 in Section 1 of Township 36 North Range 5 East. The existing Quasar pit off the Spur B road, in Section 7 of Township 36 North Range 6 East will also be used. Both pits will be expanded with future timber sales within this management block. Please see the FPA, timber sale and vicinity maps.**

Other: None.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

☒303(d)-listed water body in WAU: ☐temp.☐sediment☐completed TMDL (total maximum daily load):  
The attached department GIS map shows three segments of the South Fork Nooksack River (SFNR) listed 303d water near the proposed timber sale. Contact DNR Northwest Region office or <http://www.ecy.wa.gov/programs/wq/303d> for more information. Segment east of proposal has been listed for temperature. Segment south and upstream of proposal has been listed for fine sediments.  
☐Landscape plan:  
☒Watershed analysis: Hansen Creek watershed analysis applies to portions of the haul route.  
☐Interdisciplinary team (ID Team) report:  
☒Road design plan: See Quark Road Plan. Available at the NW region office.  
☒Wildlife report: North Cascade (Nooksack) Elk Herd Plan (March 2002) (Available via WDFW Web Site.)  
☐Geotechnical report:  
☒Other specialist report(s): Hydrologist/Soil Specialist Memo dated April 7,2003  
☐Memorandum of understanding (sportsmen’s groups, neighborhood associations, tribes, etc.):  
☒Rock pit plan: See Quark Road Plan. Available at the NW region office.  
☒Other: Forest Resources Plan Environmental Impact Statement July-1992 and Habitat Conservation Plan September-1997.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. None are known at this time.

10. List any government approvals or permits that will be needed for your proposal, if known.

☐HPA ☐Burning permit ☐Shoreline permit ☐Incidental take permit ☒FPA # ☐Other:

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include specific information on project description.)

a. Complete proposal description:

Approximately 71 acres on the slopes of Miner’s Mountain were evaluated for harvest with this proposal. Approximately 14 acres will remain unharvested in RMZ/WMZ/ buffer, snag and leave tree patches. 54 acres will be harvested by even-aged methods in two separate units of 25 and 29 acres. An additional 2.0 total acres will be cut to make way for new road construction to access both units. Estimated volume harvested will be 2,690 MBF to 8 landings. Both units will be reforested with native conifer species mix, natural seeding of hardwood and conifer species will occur. See (A.7.) above for related activities. See A.11.c for description of road work.

b. Timber stand, description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.

Type of harvest: Even-aged regeneration harvest Logging system: Cable and ground based

Pre-harvest description: Proposed harvest Unit #1 is located within a mixed conifer and hardwood stand that seeded in naturally approximately 69-70 years ago. The stand is dominated by Douglas fir timber up to 34 inches in diameter and 165 feet in height. There are also some understory components of western hemlock and western red cedar up to 26 inches in diameter and 140 feet in height. The shade tolerant trees are much smaller however, mostly 12 inches in diameter and smaller and 80-100 feet in height. There are also clumps of red alder mixed with black cottonwood within the stand, mostly oriented around and within the forested wetland in the northern end of the unit. Red alders are up to 23 inches in diameter and 110 feet in height. Black cottonwoods are up to 31 inches in diameter and 120 feet in heights. Under-story vegetation is dominated by swordfern in the hardwood pockets with salal and Oregon grape on shallow, rocky soils. Little vegetation is found under the conifer dominated portion of the stand.

Proposed harvest Unit #2 is located within a mixed conifer and hardwood stand that seeded in naturally approximately 63-72 years ago. This stand is also dominated by Douglas fir of similar size as unit #1. There are a few scattered western hemlock and western red cedar, all of them smaller than 12 inches in diameter and mostly 60-80 feet in heights. There are also scattered red alders, but no black cottonwoods and no pure clumps of hardwoods. Red alders are all less than 14 inches in diameter and 100 feet in heights.

The rights of way that will be harvested to access both units are located on old railroad grades. Timber in these grades is similar in age, size, and species composition as the proposed harvest units, but the stands are much more sparse.

Overall unit objectives: Objectives for both units are to generate revenue for the Skagit County Forest Board Trust, to protect the water quality of all streams within the sale and the vicinity of the sale, to preserve the current species diversity found on the site, to create future forest for continued revenue generation and to create, maintain and manage suitable elk habitat based on recommendations from the Washington Department of Fish and Wildlife (WDFW).

c. Road activity summary. See also attached forest practice application (FPA) for maps and more details.

The CA-1100 rock pit will provide riprap, and shot rock (surfacing) material. The Spur B pit will provide ballast material. See table in (12. a.) for locations.

Work associated with the timber sale roads is summarized below.

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
Construction		5,808	2	--
Reconstruction		--		--
Maintenance		58,080		--
Abandonment		343	.1	--
Bridge Install/Replace	--			--

Culvert Install/Replace (fish)	--			--
Culvert Install/Replace (no fish)	15			

12. Location of proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. (See attached timber sale map. See also color landscape/WAU map on the DNR website <http://www.dnr.wa.gov> under “SEPA Center.”)

a. Legal description:

Unit and ROW	Township	Range	Section
Unit 1	36N	6E	6
Unit 1	36N	6E	7
ROW – Unit 1	36N	6E	7
Unit 2	36N	6E	7
Unit 2	36N	6E	6
Unit 2	36N	5E	1
ROW – Unit 2	36N	6E	7
CA-1100 Pit Development	36N	5E	1
Spur B Pit Existing	36N	6E	7

b. Distance and direction from nearest town (include road names):

The proposed sale is located 7 miles north of the town of Lyman in Skagit County, on the Department’s CA-1000 and CA-1100 roads.

c. Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website <http://www.dnr.wa.gov> under “ SEPA Center.”)

WAU Name	WAU Acres	DNR Managed Acres	Proposal Acres
Howard Creek	39,747	6,585	56 (includes ROW acres)
Sub-basin Name	Sub-basin Acres	DNR Managed Acres	Proposal Acres
Sub-Basin 5	7,452	1,668	56 (includes ROW acres)

13. Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website <http://www.dnr.wa.gov> under “SEPA Center” for a broader landscape perspective.)

The table below reports timber harvests within the last seven years on private lands and DNR lands including sold and not harvested and future planned DNR timber sales. No attempt was made to predict future timber harvests on private land. Data for department and private harvests were compiled from the department’s GIS database as of April 2003. The attached WAU map created in April 2003 shows the location of the harvest activity.

NAME OF WAU	DNR ACRES OF EVEN-AGED HARVESTS IN LAST 7 YEARS & SOLD TIMBER SALES TO BE HARVESTED 2003	DNR ACRES UNEVEN-AGED HARVESTED IN LAST 7 YEARS	PRIVATE ACRES EVEN-AGED HARVESTED IN LAST 7 YEARS	PRIVATE ACRES UNEVEN-AGED HARVESTED IN LAST 7 YEARS
Howard Creek	~800	0	~3,400	~700

Due to past timber harvesting, in the Howard Creek WAU it is assumed that similar impacts, which have impacted the drainages in the general vicinity of the WAU have occurred. Examples are elevated stream temperatures due to lack of riparian forest cover, lack of coarse woody debris in streams, high sediment supply in streams and changes in peak flows. Timing of future sales has been set to address these issues. Segments of the South Fork Nooksack River (SFNR) with 303d listing are lacking coarse woody debris, and are impacted by high sediment loading and elevated water temperature. This information was obtained from maps produced on April 10, 2003.

This timber sale has been designed to mitigate potential impacts described above and to lessen significant cumulative impacts to watershed resources. The Quark Timber Sale, as well as other recently sold and planned department sales in the Howard Creek WAU, have or will meet or exceed the requirements of current regulatory requirements (Forest Practices Act). The department’s general policy to apply the greater protection measures, have been incorporated into this sale. Riparian areas will retain timber and under growth to provide adequate shade and down woody debris recruitment. All road construction will meet the Northwest Region requirements relating to seasonal restrictions, revegetation of exposed soils, immediate ballasting of newly pioneered subgrade and the size/spacing of drainage structures to control runoff. Harvest activities will meet the department’s HCP prescriptions for requirements relating to legacy tree quantities, spacing and structure, RMZ’S, wetlands, rain-on-snow, slope stability, cliffs, and roads.

The Quark Timber Sale as well as all of the department’s ownership, within the Howard Creek WAU is within the range of the Nooksack Elk Herd designated as “core management area” by the WDFW. The WDFW’s management plan for this herd cites loss of thermal cover due to timber harvesting, lack of corridors for travel between winter and summer ranges and human disturbance as major factors that have contributed to the decline of this herd. The most recent Nooksack Elk herd management plan, published in March, 2002, recommends habitat enhancement by seeding cleared areas to promote quality forage, limiting human access by gating roads, and maintaining corridors for herds to move between ranges. The DNR manages 8,000+ acres of forest within the “core management area” for the Nooksack herd. In these areas, which consist primarily of mature conifer forests within critical winter range for the herd, the department has collaborated with the WDFW and established an informal agreement that preserves suitable habitat conditions for this herd. On department lands, harvest units are scheduled to maintain large corridors for elk movement. Ground disturbed by new road construction will be seeded with a special Elk forage mix recommended by WDFW. The access road to all Department managed land in the area is gated and kept locked by the private landowner in order to limit human access.

The department’s (HCP) outlines strategies to protect all federally listed threatened/endangered species, species that will be listed in the future and uncommon habitat types found on forested lands in western Washington. HCP prescribed riparian buffers intended to protect salmon and trout habitat were applied to the Quark Timber Sale and will be applied to all future sales in the vicinity. The HCP identifies large, structurally unique trees and snags as uncommon habitats that need to be protected. An average of 10 trees per acre will remain after harvest on the Quark Timber Sale. These trees will function for future snag and large structurally unique tree recruitment and provide for soil stability now. The Quark Timber Sale was not determined to contain suitable murrelet habitat. No other species or habitats designated for protection by the HCP were found in the vicinity of the Quark Timber Sale. No other mitigation is planned.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (check one):

☐Flat, ☐Rolling, ☐Hilly, ☐Steep Slopes, ☒Mountainous, ☐Other:

- 1) General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone).  
The Howard Creek WAU is located in Township 36 North, Ranges 5, 6, and 7 East and Township 37 North, Range 5 East, in Skagit and Whatcom counties. The WAU consists of 39,747 acres, all within the west cascade hemlock zone, and has an elevation range of 400 to 6,000 feet. Climate is moderate with 77 inches of average annual precipitation. Aspects are northeast and southwest. The major timber type is conifer with mixed hardwoods. Ages throughout the WAU are 0-90 years. There are small patches of old-growth forest on, and near, steep slopes within various named and unnamed streams throughout the WAU.
- 2) Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).  
The proposed sale is generally the same as the WAU except there are no old growth remnants within the sale or immediate vicinity of the proposal and the soils are more stable.

b. What is the steepest slope on the site (approximate percent slope)?  
The steepest slopes within the proposed harvest boundaries are approximately 90 percent over approximately 5 percent of the harvest area. No road construction on slopes over 10%.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.

State Soil Survey #	Soil Texture	% Slope	Acres	Mass Wasting Potential	Erosion Potential
Unit #1-25 ac					
4789	Gravelly Loam	3-30	12	Insignificant	Low
4790	Very Gravelly Loam	30-65	13	Medium	Medium
ROW-Unit #1 2 ac					
4789	Gravelly Loam	3-30	2.0	Insignificant	Low
Unit #2-29 ac					
4789	Gravelly Loam	3-30	15	Insignificant	Low
4790	Very Gravelly Loam	30-65	14	Medium	Medium
ROW-Unit #2 1 ac					
4789	Gravelly Loam	3-30	1.0	Insignificant	Low

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe. No.

- 1) Surface indications:  
None. The DNR’s “Risk Assessment Map for Water & Soils” for Township 36 North, Range 05 East and Township 36 North, Range 06 East indicates areas of “Most susceptible to Mass Wasting” within the sale boundaries. Upon completion of the reconnaissance of both units nothing of this nature was found. See the Hydrologist/Soil Specialist Memo dated April 7, 2003.
- 2) Is there evidence of natural slope failures in the sub-basin(s)?  
☐No ☒Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:  
Slope failures (shallow) have occurred on inner gorge slopes and on steep, incised stream banks.
- 3) Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?  
☐No ☒Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:  
Associated management activity:  
On private land near the center of the sub-basin, a failure occurred after timber harvest on steep slopes. This was observed on aerial photos, in the west 1/2 of Section 16, Township 36 North, Range 6 East approximately 5 acres in size.

4) Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?  
☒No ☐Yes, describe similarities between the conditions and activities on these sites:

5) Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal. **No potentially unstable slopes were encountered. No extra precautions were taken. See the Hydrologist/Soil Specialist Memo dated April 7,2003.**

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.  
Approx. acreage new roads: **2 ac.** Approx. acreage new landings: **2 ac.** Approx. acreage rock pit fills: **1.5ac.** Fill source:

**Native material, rock from on-site rock pit that will be developed with this sale and rock from our CA-2000 and Spur B pits, will provide construction materials for new roads and landings.**

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe. **Yes. Yarding and road construction during periods of heavy rainfall could cause localized erosion. If any erosion occurs it should be contained on site.**

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? Approximate percent of proposal in permanent road running surface (includes gravel roads):  
**Approximately 4% of the site will consist of permanent road after completion of the project.**

h. Propose measures to reduce or control erosion, or other impacts to the earth, if any:  
(Include protection measures for minimizing compaction or rutting.)

**This includes falling trees away from streams in cable yarding areas with logs fully suspended over streams and falling trees away from streams in ground based areas and yarding away from streams. Between October 15- April 30, shovel yarding operations, timber and rock hauling, road construction, reconstruction and maintenance activities will not be allowed, unless the contract administrator approves a plan, submitted by the operator, that will guarantee adequate protection to surface waters. Grass seeding of newly exposed soils from the construction of roads, spurs and landings will occur shortly after completion of construction. Reforestation will occur within two years of harvest. Cross-drain culverts with catch basins and rock head walls at culvert inlets and rock energy dissipaters at outlets will help reduce erosion.**

2. Air

a. What types of emissions to the air would result from the proposal (i.e., dust from truck traffic, rock mining, crushing or hauling, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

**No emissions are anticipated other than minor amounts of equipment exhaust and road dust created by truck traffic.**

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe. **Does not apply.**

c. Proposed measures to reduce or control emissions or other impacts to air, if any: **Not anticipated.**

**If slash is burned, it will be burned in adherence to the State’s Smoke Management Program.**

3. Water

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. (See attached timber sale map and forest practice base maps.)  
**Yes.**

a) Downstream water bodies:

**All unnamed streams associated with the proposed Quark Timber Sale flow into the S.F.N.R. The S.F.N.R. in Section 12, Township 36 North, Range 5 East is listed as a 303(d) water. Water from these units flow into the S.F.N.R. where it has the 303 (d) listing. Streams and their associated buffers are described in b) below.**

b) Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in Feet (per side for streams)
Unnamed Streams	3	1	157
Unnamed Streams	5	4	0
Unnamed Wetland	Forested	1	157

c) List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.

**There is a wetland within Unit #1 protected by a site index buffer. The CA-1000 road encroaches on the WMZ and will be mitigated by adding a like amount to buffer to the north end of the WMZ. Some limited timber harvest will occur within the WMZ on the south and west side of the wetland. A minimum of 120 square feet of basal area per acre will be left in the area where trees are removed. The majority of the largest, most wind-firm trees will be left in order to protect the WMZ from wind throw. No harvest will take place within the type 3 stream RMZ. There will not be a wind buffer placed on the RMZ because this creek is less than 5’ wide.**

2) Will the project require any work over, in, or adjacent (within 200 feet) of the described waters? If yes, please describe and attach available plans.

☐No ☒Yes (See RMZ/WMZ table above and attached timber sale map.)  
Description (include culverts):

See 3,a,1 c. above.  
Timber harvest will occur adjacent to five type 5 streams. In areas where ground-based yarding will be allowed, trees will be felled and yarded away from type 5 streams. In areas designated for cable yarding only, trees will be felled away from the type 5 streams and will be fully suspended when being yarded over these streams. Except for newly constructed road crossings, no equipment will be allowed within 30 feet of type five streams. Three type 5 streams will be crossed with new road construction. Harvesting will occur within 200 feet of the wetland, and the type 3 stream (see B.3.a.1.c above).

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.  
**None. Culverts will be placed at type 5 streams crossings so that no fill will be placed directly into the water.**
- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. (Include diversions for fish-passage culvert installation.)  
☒No ☐Yes, description:
- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.  
☒No ☐Yes, describe location:
- 6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.  
☒No ☐Yes, type and volume:
- 7) Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water? **Yes.**

According to slope stability summaries from the DNR’s GIS database, 8% of the sub-basin has high soil erosion potential, while 7% has high soil mass wasting potential. Since these areas tend to be associated with steep incised stream channels, there is a high potential for eroded material to enter stream channels.

- 8) Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?  
☐No ☒Yes, describe changes and possible causes:

See A. 13.

- 9) Could this proposal affect water quality based on the answers to the questions 1-8 above?  
☒No ☐Yes, explain:
- 10) What are the approximate road miles per square mile in the WAU and sub-basin(s)?  
Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?  
☒No ☐Yes, describe:  
**Howard Creek WAU: 3.6 Sub-basin 5: 3.5**
- 11) Is the proposal within a significant rain-on-snow (ROS) zone? If not, **STOP HERE** and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.  
☐No ☒Yes, approximate percent of WAU in significant ROS zone. See table below.  
**15 acres of unit #1 is in the significant (ROS) zone within sub-basin #5.**

Analysis Area	Percent in significant ROS
Sub-Basin 5	26% (all ownerships)

- 12) If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?

Based on 2001 aerial photo interpretation and local knowledge, the approximate percentage of the sub-basin within the significant ROS zone (all ownerships) that is hydrologically mature is 67%.

- 13) Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?  
☐No ☒Yes, describe observations:

Changes in peak flows within the WAU and sub-basin have not been quantified. Due to the amount of logging and other human influences in the area to the present time, it is assumed that changes in peak flows have occurred. The Cavanaugh block of timber in the WAU is second growth with numerous age classes.

- 14) Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.

This proposal is not expected to increase peak flows to an extent that they would cause measurable damage to salmonid fish habitat. The scientific data used to develop both the Department’s HCP policy on rain-on-snow suggests the following: Measurable damage to salmonid fish habitat (i.e. destabilization and transport of coarse woody debris, excessive sedimentation that fills in pools, and destruction of salmon redds) occurs when peak flows are increased by 1 inch or more during a 10 year 24-hour storm (a storm of moderate intensity). Hydrologic models suggest that this threshold cannot be reached in sub-basin’s



where less than 1/3 of the sub-basin is within the significant rain-on-snow zone. This is the situation in sub-basin 5. This sub-basin only has 26% of its total area within the rain-on-snow zone. Therefore this sub-basin is not believed to be sensitive to increased peak flows, and so the proposed timber harvest within this sub-basin is not expected to cause a detrimental increase in peak flows.

- 15) Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?  
☒No ☐Yes, possible impacts:
- 16) Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.  
**Grass seeding of newly exposed soils from the construction of spurs and landings will occur shortly after completion of construction. Reforestation will occur within two years of harvest. All culverts are sized for 100-year flood events. Cross drains are adequate in number to avoid concentration of run-off. Cross-drain culverts with catch basins and rock head walls at culvert inlets and rock energy dissipaters at outlets will be maintained.**

b. Ground Water:

- 1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known. **No.**
- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve. **Does not apply.**
- 3) Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?  
☒No ☐Yes, describe:  
a) Note protection measures, if any. **None.**

c. Water Runoff (including storm water):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.  
**Storm water runoff will be collected by landings, road surfaces and ditches then diverted through cross drain culverts and or directly onto the forest floor.**
- 2) Could waste materials enter ground or surface waters? If so, generally describe.  
**It is unlikely that any waste materials could enter any surface or ground water. Insignificant amounts of oil, fluids and other lubricants may be discharged from heavy equipment use. No lubricants will be disposed of on site.**  
a) Note protection measures, if any.  
**Culverts will be placed to minimize the amount of ditch water entering existing streams.**

- d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:  
(See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.)  
**See B.1.h..**

4. Plants

a. Check or circle types of vegetation found on the site:

- ☒deciduous tree: ☒alder, ☒maple, ☐aspen, ☒cottonwood, ☐western larch, ☒birch, ☐other:
- ☒evergreen tree: ☒Douglas fir, ☐grand fir, ☐Pacific silver fir, ☐ponderosa pine, ☐lodgepole pine, ☒western hemlock, ☐mountain hemlock, ☐Englemann spruce, ☐Sitka spruce, ☒red cedar, ☐yellow cedar, ☐other:
- ☒shrubs: ☒huckleberry, ☒salmonberry, ☒salal, ☐other:
- ☐grass
- ☐pasture
- ☐crop or grain
- ☒wet soil plants: ☐cattail, ☐buttercup, ☐bullrush, ☒skunk cabbage, ☐devil's club, ☐other:
- ☐water plants: ☐water lily, ☐eelgrass, ☐milfoil, ☐other:
- ☐other types of vegetation:
- ☐plant communities of concern:

- b. What kind and amount of vegetation will be removed or altered? (See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.) **Approximately 2,689 MBF of hardwood and conifer timber will be removed from the site. This represents approximately 90% of the timber volume within the sale area. Under story vegetation will be disturbed above ground, but is expected to remain in tact.**

- 1) Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: <http://www.dnr.wa.gov> under "SEPA Center.")  
**Unit #1 (25ac) is surrounded by a several hundred acres of continuous conifer/hardwood timber, approximately 65 years old. Stand composition is similar to proposed harvest unit #1.**

Unit #2 (29ac) is bordered on the north, south, and east by several hundred acres of continuous conifer/hardwood timber, approximately 65 years old . Stand composition is similar to proposed harvest unit #2. West of this unit is a 110 acre Douglas fir plantation approximately 15-20 years old.

- 2) Retention tree plan:  
An average of 10 trees per acre will be left in Units #1, and #2. The largest, dominant trees will be scattered and clumped over the units. Other dominant and co-dominant trees are in small clumps and scattered to provide irregular patterns and future complex structures. Trees selected for retention include trees that provide current and future wildlife benefit and irregular defective large trees were selected when possible. Trees with future snag producing qualities were selected. Most of the selected leave trees were conifer. Some hardwood was selected to provide diversity in the units and as perches for wildlife

One leave tree patch of 0.76 acres in the northeast corner of Unit #1 is orientated around a large snag, and is intended to protect the snag from being felled. The leave tree patch will allow logging crews to remain a safe distance from the snag when working. Another such leave tree area was left around a large (~50 “ dbh) snag in unit 2. There is also one leave tree patch about 1.0ac in size against a small cliff in unit #2, that is intended to preserve the microclimate of the cliff habitat and protect it from logging disturbance. Overall, very few snags were found within the units. Any snag that does not violate L&I safety standards for harvest operations will be retained.

- c. List threatened or endangered plant species known to be on or near the site. **None.**
- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Approximately 14 acres of forest will be left unharvested in RMZ/WMZ buffers and leave tree patches. Conifer seedlings will be planted within two years of harvest. An average of 10 trees per acre will be left in units #1 and #2. See green tree retention plan in B.4.b.2. above.

5. Animal

- a. Circle or check any birds animals or unique habitats which have been observed on or near the site or are known to be on or near the site:  

☒ birds: ☒hawk, ☐heron, ☒eagle, ☒songbirds, ☒pigeon, ☐other:  
☒ mammals: ☒deer, ☒bear, ☐elk, ☐beaver, ☒other: **Bob Cat & Cougar**  
☐ fish: ☐bass, ☐salmon, ☐trout, ☐herring, ☐shellfish, ☐other:  
☒ unique habitats: ☐talus slopes, ☐caves, ☒cliffs, ☐oak woodlands, ☐balds, ☐mineral springs
- b. List any threatened or endangered species known to be on or near the site (include federal- and state-listed species).  
  
All streams in the vicinity of this sale are tributaries to the S.F.N.R. via several un-named streams. Based on research from the StreamNet.org analysis, the S.F.N.R. is habitat for migration or rearing or spawning of spring and fall Chinook and Coho. The S.F.N.R. is habitat for migration or rearing or spawning for Bull Trout. Chinook salmon and Bull Trout are listed as a threatened species and Coho salmon are a candidate for listing. No other threatened or endangered species are indicated in the area.
- c. Is the site part of a migration route? If so, explain.  
☒Pacific Flyway ☐Other migration route: Explain if any boxes checked:  
All of Washington State is considered part of the Pacific Flyway. No impacts are anticipated as a result of this proposal being completed.
- d. Proposed measures to preserve or enhance wildlife, if any:

- 1) Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.  
Species /Habitat: **Mature Forest Structure**  
  
Protection Measures: **See green tree retention plan in B.4.b.2.**  
  
Species/Habitat: **Elk habitat**  
  
Protection Measures: **See discussion in A.13**

6. Energy and Natural Resources

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project’s energy needs? Describe whether it will be used for heating, manufacturing, etc. **None.**
- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe. **No.**
- c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any: **None.**

7. Environmental Health

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, which could occur as a result of this proposal? If so, describe.  
  
There is a minimal hazard from heavy equipment operations. There is a potential fire hazard if operating during severe fire weather conditions during the summer.
- 1) Describe special emergency services that might be required.  
**Does not apply.**
- 2) Proposed measures to reduce or control environmental health hazards, if any:



**Operator will follow DNR's fire season requirements.**

b. Noise

- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)? **None.**
- 2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from this site. **Noise from log trucks and logging equipment will be present while operating during daylight hours.**
- 3) Proposed measures to reduce or control noise impacts, if any: **None.**

**8. Land and Shoreline Use**

- a. What is the current use of the site and adjacent properties? (Site includes the complete proposal, e.g. rock pits and access roads.) **Timber Production.**
- b. Has the site been used for agriculture? If so, describe. **No.**
- c. Describe any structures on the site. **None.**
- f. Will any structures be demolished? If so, what? **None.**
- e. What is the current zoning classification of the site? **Industrial Forestry.**
- f. What is the current comprehensive plan designation of the site? **Industrial Forestry.**
- g. If applicable, what is the current shoreline master program designation of the site? **Does not apply.**
- h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify. **No.**
- i. Approximately how many people would reside or work in the completed project? **Does not apply.**
- j. Approximately how many people would the completed project displace? **Does not apply.**
- k. Proposed measures to avoid or reduce displacement impacts, if any: **Does not apply.**
- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any: **The design of this project is consistent with current comprehensive plans and zoning regulations.**

**9. Housing**

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing. **Does not apply.**
- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing. **None.**
- c. Proposed measures to reduce or control housing impacts, if any: **None.**

**10. Aesthetics**

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principle exterior building material(s) proposed? **Does not apply.**
- b. What views in the immediate vicinity would be altered or obstructed?  
**A total of 54 unit acres and 2 right-of-way acres will be even-aged harvested over the area.**

- 1) Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?  
☒ **No** ☐ Yes, viewing location:
- 2) Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?  
☒ **No** ☐ Yes, scenic corridor name:
- 3) How will this proposal affect any views described in 1) or 2) above? **N/A.**

- c. Proposed measures to reduce or control aesthetic impacts, if any: **N/A.**

**11. Light and Glare**

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur? **Does not apply.**
- b. Could light or glare from the finished project be a safety hazard or interfere with views? **Does not apply.**
- c. What existing off-site sources of light or glare may affect your proposal? **Does not apply.**
- d. Proposed measures to reduce or control light and glare impacts, if any: **None.**

12. Recreation

- a. What designated and informal recreational opportunities are in the immediate vicinity?  
**Hunting, fishing, hiking, horse riding and general recreation.**
- b. Would the proposed project displace any existing recreational uses? If so, describe: **No.**
- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any: **None.**

13. Historic and Cultural Preservation

- a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.  
**None are known at this time.**
- b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.  
**None.**
- c. Proposed measures to reduce or control impacts, if any:  
(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)

**Area Native American tribes (Lummi and Nooksack) were sent a map of the proposed timber sale along with a letter requesting that they identify any issues or concerns and bring it to our attention.**

14. Transportation

- a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.  
**Please see timber sale, vicinity, adjacency maps. Please see WAU maps on the DNR website under “SEPA CENTER”.**
  - 1) Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)?  
**No.**

- b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop? **Does not apply.**
- c. How many parking spaces would the completed project have? How many would the project eliminate? **Does not apply.**
- e. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private). **Yes.**

**See question A-11 of this checklist for the background description of this completed proposal, which includes a road summary. See also the attached FP Application Roads Section. A complete detailed road plan is available at the DNR NW region office.**

- 1) How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?  
**There should not be any impact.**

- e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe. **No.**
- f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

**It is estimated that 16-20 trips per day would occur during active logging operations. Once the logging has been completed, no new vehicular trips will be necessary except for periodic road maintenance and tree planting stand assessments/maintenance.**

- g. Proposed measures to reduce or control transportation impacts, if any: **NONE.**

15. Public Services

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.  
**No.**
- b. Proposed measures to reduce or control direct impacts on public services, if any.  
**Restrict access during periods of extreme fire danger.**

16. Utilities

- a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.  
**Does not apply.**
- b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity, which might be needed.  
**Does not apply.**

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Completed by: \_\_\_\_\_ Date: \_\_\_\_\_  
Title

Review by: \_\_\_\_\_ Date: \_\_\_\_\_  
Title

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
Title